

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

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|--|---|---|
| Applicant's or agent's file reference AGTZ 2 99968PCT | FOR FURTHER ACTION <div style="float: right; font-size: small;">see Form PCT/ISA/220 as well as, where applicable, item 5 below.</div> | |
| International application No. PCT/US04/40760 | International filing date (<i>day/month/year</i>) 06 December 2004 (06.12.2004) | (Earliest) Priority Date (<i>day/month/year</i>) 05 December 2003 (05.12.2003) |
| Applicant ARGO-TECH CORPORATION | | |

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 2 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the Report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box No. II)

3. ☐ **Unity of invention is lacking** (See Box No. III)

4. With regard to the **title**,



the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,



the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. 2



as suggested by the applicant.



as selected by this Authority, because the applicant failed to suggest a figure.




as selected by this Authority, because this figure better characterizes the invention.

- b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/40760

| A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : F04D 3/02 US CL : 415/72, 74, 143; 416/176, 177, 183, 234 According to International Patent Classification (IPC) or to both national classification and IPC | | |
|--|---|---|
| B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) U.S. : 415/72, 74, 75, 143; 416/176, 177, 179, 183, 223R, 234; 62/50.6 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched None Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) None | | |
| C. DOCUMENTS CONSIDERED TO BE RELEVANT | | |
| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| X --- Y | WOOD, G.M. et al. "An Experimental Study of Cavitation in A Mixed Flow Pump Impeller", Received October 13, 1959, Figure 1 - Impellers A and B, Figure 2, page 7. | 1-4, 7, 9, 11 ----- 5-6, 10, 12-13 |
| X | US 4,904,158 A (KUN) 27 February 1990 (27.02.1990), column 2, lines 46-65, figure 1. | 1-2 |
| X | US 6,435,829 B1 (MENG et al) 20 August 2002 (20.08.2002), column 2, lines 16-67, column 3, lines 1-9, figures 1 and 7. | 1-3, 7 |
| X --- Y | US 1,874,450 A (COATS) 30 August 1932 (30.08.1932), page 1, lines 1-4, lines 56-73, figures 1-2. | 1-4, 7, 11, 14-16, 18-19 ----- 17 |
| Y | US 5,947,684 A (KATO et al) 07 September 1999 (07.09.1999), column 2, lines 33-43, figure 2. | 5-6 |
| Y | US 3,522,997 A (RYLEWSKI) 04 August 1970 (04.08.1970), column 4, lines 42-47, figures 2-3. | 13 |
| <input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex. | | |
| * Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family | | |
| Date of the actual completion of the international search 29 April 2005 (29.04.2005) | | Date of mailing of the international search report 29 AUG 2005 |
| Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230 | | Authorized officer  Christopher Verdier Telephone No. (703) 308-0861 |